Abstract

This study describes the implementation of antiplatelet therapy monitoring on the analyzer Multiplate that works on the principle of impedance aggregometry. We used to determine four tests - ASPItest used for monitoring acetyl salicylic acid (ASA) therapy, ADPtest and ADPtestHS used to monitoring thienopyridines treatment and TRAPtest , which is used to monitoring treatment with GPIIb/IIIa inhibitors. The aim of this study was to verify the accuracy of this method for individual tests, to determine its own reference limits and compare them with literature data and on a group of cardiac patients receiving dual antiplatelet therapy (aspirin 100 mg per day and clopidogrel 75 mg per day) to assess any resistance to these drugs.

Accuracy of the method we verified the group of 10 blood donors without any treatment. Each sample was repeatedly measured 5 times and from the measured values we calculated coefficients of variation. Our values of coefficients of variation from the values given by the manufacturer (CV 6 - 10 %) did not differ significantly (ASPItest: CV 8.7 %, ADPtest: CV 8.8 %, ADPtestHS: CV 13.3 % and TRAPtest: CV 12.1 %).

We also verified on a group of 32 blood donors without any treatment reference ranges AUC for single tests, which were compared with reference limits from the literature. Between the AUC values of our control group and the literature data were not significant differences (ASPItest: p = 0,6136; ADPtest: p = 0,0745; TRAPtest: p = 0,3518). Only when using ADPtestHS significant difference was observed (p = 0.0004).

The group of 83 cardiac patients on dual therapy, we evaluated the presence of resistance to any of the drugs in two consecutive sampling. 1st blood collection was performed 2 to 5 days after medication and 2nd blood collection for 3 to 6 months after the first. Resistance in both sampling subscriptions to the daily dose has been demonstrated in two patiens (2,4 %) on dual therapy and in two patiens (2,4 %) with ASA therapy only, in one patient (1,2 %) with clopidogrel therapy only. Numbers of patients with resistance to treatment in the studied cohort are lower than in the literature.